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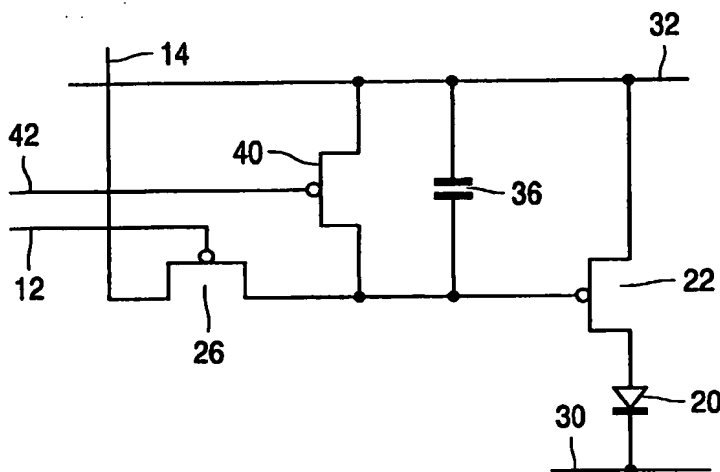
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(54) Title: **MATRIX DISPLAY DEVICE WITH PHOTSENSITIVE ELEMENT**



(57) Abstract: A matrix display device comprises an array of addressable pixels (10) each having a display element (20) and a control circuit for controlling the operation of the display element. The control circuit includes a charge storage capacitor (36) and a photosensitive device (40) coupled to the storage capacitor for regulating charge stored on the storage capacitor (36) in accordance with light falling on the photosensitive device (40). The control circuit further comprises means for independent voltage control (42) of a gate terminal of the photosensitive device (40), preferably a phototransistor. In this way a more efficient and flexible biasing of the phototransistor is possible. The means preferably comprise a second row line (42) being connected to the gate terminal of the photosensitive device (40). This additional line

allows also the use of transistors of the same polarity for this type of pixel circuit, saving additional process masks (and costs). In addition, it becomes possible to use the phototransistor as a TFT switch. This dual function (phototransistor/TFT switch) enables the pixel circuit to provide additional features; for example duty-cycle techniques for motion blur compensation.

WO 2004/027744 A1



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